Claims

1. (original) A motion sensor, in particular an rpm sensor for the wheel rotation of a motor vehicle, which has an integrated circuit, connectable preferably via an electrical cable, with a measured value transducer array and an electronic circuit arrangement for processing the measurement signals, characterized in that a housingless integrated circuit (32) of the flip-chip type is mounted on a basic component (10) provided with conductor tracks (28, 30) and embodied as an MID (Molded Interconnect Device) component and is enclosed jointly with the conductor tracks (28, 30) and optionally further elements (16, 38) by a diamagnetic or paramagnetic covering (40, 42).

2. (original) The motion sensor in accordance with claim 1, characterized in that the basic component (10) is embodied as an injection-molded part metallized on the surface.

3. (Currently amended) The motion sensor in accordance with claim 1 ~~or 2~~, characterized in that a plastic basic body (12) of the basic component (10) is produced from at least two different plastic components, at least one of which is metallizable on its surface for forming at least one conductor track (28, 30).

4. (original) The motion sensor in accordance with claim 3, characterized in that the plastic components are LCP (Liquid Crystal Polymer) plastics.

5. (currently amended) The motion sensor in accordance with ~~one of the foregoing claims~~ claim 1, characterized in that at least one conductor track (28, 30) is machined out of a metallization of the basic component (10) by means of laser ablation.

6. (original) The motion sensor in accordance with claim 1, characterized in that the basic component (10) has hot- stamped conductor tracks (28, 30).

7. (currently amended) The motion sensor in accordance with ~~one of the foregoing claims~~ claim 1, characterized in that a permanent magnet (16) is inserted into the basic component (10).

8. (currently maended) The motion sensor in accordance with ~~one of the foregoing claims~~ claim 1, characterized in that the integrated circuit (32) is sheathed, together with a permanent magnet (16), by a cup-shaped diamagnetic or paramagnetic covering, preferably a plastic covering (40).

9. (currently amended) The motion sensor in accordance with ~~one of the foregoing claims~~ claim 1, characterized in that the integrated circuit (32) has gold terminal humps (37) and is secured and contacted with them to terminal points (34, 36) of the conductor tracks (28, 30).

10. (original) The motion sensor in accordance with claim 9, characterized in that the terminal humps (37) of the integrated circuit (32) are joined to the terminal points (34, 36) of the conductor tracks (28, 30) on the basic body (10) directly or by means of an isotropically electrically conductive adhesive.

11. (currently amended) The motion sensor in accordance with ~~one of the foregoing claims~~ claim 1, characterized in that the integrated circuit (32) is joined mechanically to the basic component (10) by a plastic underfiller.

12. (currently amended) The motion sensor in accordance with ~~one of the foregoing claims~~ claim 1, characterized in that a connection device (14) is integrated into a plastic basic body (12) of the basic component (10) that is produced by casting or injection molding of thermoplastic.

13. (currently amended) The motion sensor in accordance with ~~one of the foregoing claims~~ claim 1, characterized in that in the region between the integrated circuit (32) and the contact lugs (31) for the external connection, the conductor tracks (28, 30) are bridged by a capacitor (38).

14. (currently amended) The motion sensor in accordance with ~~one of the foregoing claims~~ claim 1, characterized in that the integrated circuit (32) and the part of the basic component (10) receiving the permanent magnet (16) are surrounded by a prefabricated, cup-shaped, diamagnetic or paramagnetic covering (40), preferably by a plastic covering, which at least with its opening edge (41) reaches into an outer encapsulation (42) of the sensor, which joins the cup-shaped covering (40) to the basic component (10), forming a unit.

15. (original) A method for producing a motion sensor, in particular an rpm sensor for the wheel rotation of a motor vehicle, which has an integrated circuit, connectable preferably via an electrical cable, with a measured value transducer array and an electronic circuit arrangement for processing the measurement signals, characterized in that by casting or injection molding of thermoplastic, a basic component (10, 12) is produced; that conductor tracks (28, 30) for the connection to a housingless integrated circuit (32) are mounted on the basic component (10, 12); that the integrated circuit (32) is joined in wireless fashion by the flip-chip technique to the conductor tracks (28, 30; 34, 36), and the arrangement is then sheathed at least partly with an outer encapsulation (42) in a further casting or injection molding process.

16. (original) The method in accordance with claim 15, characterized in that the plastic basic body (12) of the basic component (10) is injection-molded in at least two work steps from at least two different thermoplastic components, of which at least one is metallizable in currentless fashion and at least a further one is not metallizable.

17. (original) The method in accordance with claim 16, characterized in that first, an injection-molded part (11) is produced from a metallizable plastic component, which is then spray-coated with a non-metallizable plastic component, forming the plastic basic body.

18. (currently amended) The method in accordance with claim 16 ~~or 17~~, characterized in that the conductor tracks (28, 30) are mounted on the plastic basic body (12) by currentless metallization of the metallizable plastic component.

19. (currently amended) The method in accordance with ~~one of claims 15 through 18~~ claim 15, characterized in that a permanent magnet (16) is spray-coated with a non-metallizable plastic in the process of injection molding of the plastic basic body (12).